

Remarks

This application has been carefully reviewed in light of the Office Action of April 8, 2003. By this amendment, independent claims 15 and 21 have been amended to specify that the de-aluminating procedure occurs after the steaming procedure. While this would appear to be clear when the claims as originally presented are construed in light of Applicants' specification, nevertheless, the foregoing amendment avoids any uncertainty on this point. In addition, a change of an editorial nature has been made in subparagraph (b) of claim 21. Reconsideration and allowance of this application is respectfully requested for the reasons set forth below.

The rejection of claims 15 – 22 as unpatentable under 35 U.S.C. 103 as obvious in view of EPO 109060 in view of U.S. Patent No. 6,171,556 to Burke et al. is respectfully traversed. It is noted that the Office Action refers to an alternative rejection as involving anticipation under 35 U.S.C. 102(b), but since it is clear that a combination of the two references is involved, it would appear that there is, in reality, no rejection under §102. Accordingly, this response will address the rejection based upon a combination of EPO 109060 and U.S. Patent No. 6,171,556 to Burke as a rejection under 35 U.S.C. 103(a). This rejection is respectfully traversed for the reasons set forth below.

In summary of applicants' position as developed in detail below, applicants would respectfully submit that the combination of EPO 109060 and Burke does not establish obviousness of applicants' invention as set forth in the claims because: (1) the patent to Burke does not involve a pretreatment procedure involving a heating of the catalyst in steam followed by treatment with a complexing agent with aluminum to remove amorphous aluminum, and thus the combining of Burke with EP '060 would not result in a process involving this procedure, (2) the patent to Burke constitutes non-analogous art, (3) the proposed combination of EP '060 and Burke involves a hindsight reconstruction of prior art teachings which becomes possible only after a consideration of applicants' disclosure, and (4) the proposed combination of prior art

teachings would not result in a process in which a pre-treated catalyst is contacted to produce an effluent containing a propylene in which the propylene yield is from 30 to 50% based on the olefinic content of the feedstock as required in each of applicants' independent claims 15 and 21.

Considering initially point (1), as described in applicants' specification, for example, in the paragraph bridging pages 13 and 14, the procedure of steaming and de-alumination of the catalyst by treatment with a complexing agent provides a technique for de-alumination within the pore volume of the catalyst framework so that it occurs substantially throughout the catalyst framework. Thus, the required procedure as set forth in each of applicants' claims involves steaming and treatment with a complexing agent. The steaming step reduces the tetrahedral aluminum in the catalyst framework and converts the aluminum into octahedral aluminum in the form of amorphous alumina. The subsequent treatment with the complexing agent complexes the alumina in a water soluble complex, which is removed from the catalyst framework. The patent to Burke does not disclose a process involving treatment with a complexing agent, but instead discloses an acid leaching procedure in which aluminum is converted to an aluminum ion salt which is removed with the leaching liquor. In fact, in Burke, the preferred mode of operation is to first acid leach the zeolite, followed by steam treatment (see Column 7, lines 58-61; see also Example 5 of Burke in which zeolite beta was first leached with concentrated sulfuric acid followed by steaming). The secondary reference involves leaching with a strong acid to form a water soluble aluminum salt which can then be removed by subsequent steaming. Treatment with a complexing agent to form aluminum complexes after steaming is not involved in Burke and even if the prior art references are combined as proposed in the rejection, the result would not be a combination of steaming and treatment with a complexing agent as involved in applicants' claims.

For reasons given below, the patent to Burke would appear to constitute non-analogous art within the meaning of the standards established by the CCPA in *In re Wood* and adapted by the Federal Circuit in *In re Deminski* (infra). However, this issue aside and assuming Burke is analogous art, it is respectfully submitted that the only basis for combining the teachings of the prior art references lies in applicants' disclosure and not in the references themselves.

For the reasons advanced above, it is respectfully submitted that the proposed combination of EP '060 and Burke cannot be made in a manner to arrive at applicant's invention as set forth in the claims (involving heating in steam and de-alumination by treatment with a complexing agent) even if it were proper to use applicants' disclosure as a basis for combining the diverse teachings of the references. However, assuming for the sake of argument that EP '060 and Burke could be selectively combined in a manner to arrive at applicants' invention, it is believed clear that this cannot be done in a manner consistent with the proper standard to be applied in combining prior art teachings. This standard forbids using an applicant's own disclosure as a basis for assembling prior art teachings and requires a suggestion or motivation in the prior art as reflected in decisions in *ACS Hospital Systems, Inc. v. Montefiore Hospital*, 221 USPQ 929 (Fed. Cir. 1984) and *Ex parte Giles* 228 USPQ 886 (PTO Bd. Of Appeal. And Int. 1985). As expressed by the Board in *Giles* at 688:

Only appellant's disclosure and not the prior art provides a motive for achieving the combination as claimed by the appellant. To imbue one of ordinary skill in the art with knowledge of the invention . . . when no prior art reference or references of record convey or suggests that knowledge is to fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher.

Attention is also respectfully invited to the Federal Circuit decision in *In re Fine*, 5 USPQ2d 1956 (Fed. Cir. 1988) wherein the Court stated at 1600:

It is essential that “the decisionmaker forget what he or she has been taught at trial about the claimed invention and cast the mind back to the time the invention was made . . . to occupy the mind of one skilled in the art who is presented only with the references, and who is normally guided by the then-accepted wisdom in the art.” *Id.* One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention. (Emphasis added)

The admonitions in *Ex parte Giles* and *In re Fine* are to step back in time to evaluate the invention only in the context of what is disclosed in the references without regard to what is disclosed in applicants’ specification. When this is done, it is believed clear that one of ordinary skill in the art would not arrive at applicants’ invention based only upon the references and “the then-accepted wisdom in the art.” Burke, as noted above, does not involve treatment of a zeolite with a complexing agent. Further, Burke does not involve a process involving the production of propylene, or any other olefin, from an olefin containing heavier feedstock. Burke instead is directed to a process for treating various zeolites to arrive at a catalyst suitable for minimizing noxious emissions from the exhaust stream of an internal combustion engine. Zeolites of the MFI structure type are not disclosed in Burke, but even if they were, the fact remains that the secondary reference contains absolutely no disclosure regarding the cracking of olefinic feedstocks to produce lower molecular weight olefins of any kinds. Thus, it is clear that the prior art references provide no suggestion or motivation to attempt to combine the prior art teachings to arrive at applicants’ invention. Moreover, even if the teachings of EP ‘060 and Burke were combined, the result would still not be a process involving steaming and de-alumination with a complexing agent to remove amorphous aluminum. Instead, following the teachings of Burke, some sort of acid leaching to reduce the number of acid sites of the zeolite would be involved.

As noted above, the patent to Burke is respectfully submitted to constitute non-analogous art which cannot properly be considered to be relevant art within the meaning of decisions such as *In re Wood*, 202 USPQ 171 (CCPA 1979) and in *In re Deminski*, 230 USPQ 313 (Fed. Cir. 1986):

The determination that a reference is from a non-analogous art is therefore twofold. First, we decide if the reference is within the field of the inventor's endeavor. If it is not, we proceed to determine whether the reference is reasonably pertinent to the particular problem with which the inventor was involved. (202 USPQ 171 at 174; 230 USPQ 313 at 315)

Clearly, Burke directed to the treatment of exhaust gas streams is not within the field of the present inventors' endeavor, nor is the reference reasonably pertinent to the particular problem with which the inventors here are involved. Applicants' invention, as noted above, is concerned with the treatment of an olefinic feed stock having at least one C_4 + olefin to produce an effluent having a particular propylene yield. Obviously, the Burke patent cannot be concerned with this problem since it simply has nothing to do with the production of propylene or the cracking of olefin streams of any nature.

It is evident that the EP '060 and Burke references are directed to procedures which themselves are totally diverse from one another as well as being totally unrelated to applicants' invention. There is in the first instance nothing in the prior art references which would suggest their combination of teachings in an effort to arrive at applicants' invention. In fact, it is difficult to see how the Burke process directed to exhaust gas treatment could be incorporated in any manner in the EP '060 process. The only disclosure which would even remotely suggest to one of ordinary skill in the art that the teachings of these two references be combined is found in applicants' specification and not in the prior art.

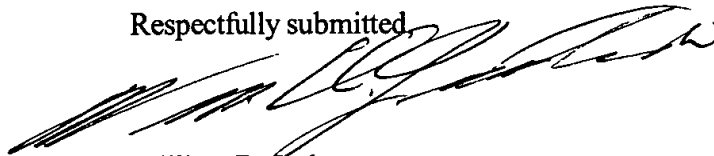
Finally, if one assumes that EP '060 and Burke are analogous art and that the reference teachings can be combined without the sort of hindsight reconstruction condemned by the Board of Appeals and Patent Interferences and the Federal Circuit, the result of combining these prior art teachings still would not lead one of ordinary skill in the art to applicants' invention. As noted previously, applicants' invention involves treatment of the catalyst with a complexing agent. Burke discloses instead, an acid leaching procedure and thus the steaming – complexing

agent treatment called for in applicants' claims would not result from the combined prior art teachings. In addition, each of applicants' claims requires a propylene yield on an olefin basis of from 30 – 50% based upon the olefinic content of the feedstock. As noted previously in the prosecution of this case, the EP '060 reference does not disclose a propylene yield as claimed, nor is such a propylene yield inherent in the operation of the prior art reference. Further, the prior art references, no matter how combined, would not lead one of ordinary skill in the art to an operation involving the propylene content of C₃ compounds as set forth in claim 16, the inlet temperature set forth in claim 17 and the space velocity as set forth in claim 18.

For the reasons advanced above, it is respectfully submitted that claims 15 – 22 are clearly patentable over the prior art references. Accordingly, an early reconsideration and allowance of this application is respectfully requested.

The Commissioner is hereby authorized to charge any additional fee that may be required or credit any overpayment to the Locke Liddell & Sapp LLP Deposit Account No. 12-1781.

Respectfully submitted,



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